

Department of Electrical and Computer Engineering
The College of New Jersey
Disciplinary Standards for Reappointment, Tenure, and Promotion

The attached disciplinary standards have been reviewed and approved by the Committee on Faculty Affairs, the Council of Deans, and the Provost.

To avoid creating a moving target for candidates for reappointment, the disciplinary standards in effect during a faculty member's first year of employment will be used for reappointment and tenure applications. Candidates for promotion will use the disciplinary standards in effect in the year in which they apply for promotion.



Department Chair

7/7/2021

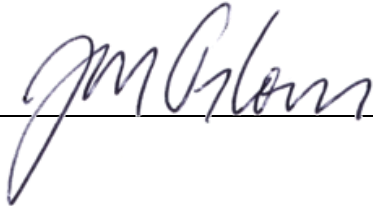
Date



Dean

7/6/2021

Date



Provost

7/8/2021

Date

The Department of Electrical and Computer Engineering will next review its disciplinary standards in Academic Year 2022-2023.

The College of New Jersey, founded in 1855 as the New Jersey State Normal School, is primarily an undergraduate and residential college with targeted graduate programs. TCNJ's exceptional students, teacher-scholars, staff, alumni, and board members constitute a diverse community of learners, dedicated to free inquiry and open exchange, to excellence in teaching, creativity, scholarship, and citizenship, and to the transformative power of education in a highly competitive institution. The College prepares students to excel in their chosen fields and to create, preserve and transmit knowledge, arts and wisdom. Proud of its public service mandate to educate leaders of New Jersey and the nation, the College will be a national exemplar in the education of those who seek to sustain and advance the communities in which they live.

The mission of the School of Engineering is to develop highly competent professionals, preparing them for entry-level positions in engineering or teaching, or for further study in graduate or professional school. Allied with the College's mission, the School of Engineering is proud of its public service mandate to educate leaders of New Jersey and the nation, fostering intellectual growth of our students so that they may become productive citizens in the service of humanity. The School is dedicated to providing a dynamic learning environment that emphasizes open-ended design, problem-solving skills, teaming, communication, and leadership skills.

To accomplish its mission, the School of Engineering:

- offers a broad array of exceptional academic programs including: biomedical engineering, civil engineering, computer engineering, electrical engineering, mechanical engineering, engineering science, and Integrative STEM education;
- engages students in creating innovative design solutions that include realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, sustainability, and global considerations, and disseminating these designs at national and regional venues;
- provides undergraduate research experiences, allowing students to work closely with members of the faculty; and
- employs highly dedicated faculty members who are effective teacher-scholars committed to maintaining a learner-centered undergraduate environment with emphasis on student mentoring.

Taking guidance from the broadly defined attributes for each rank offered by the Reappointment and Promotions Document authored by the Committee on Faculty Affairs, standards relevant to the School of Engineering departments can be defined. Fundamentally, it is important to illustrate at each rank whether the program with which a faculty is associated with is better because of the contributions of that faculty member. Such contributions should be impacting, meaningful, positive, and sustainable. The difference of the standard for different ranks should be related only to the maturity level of those contributions, not the type. In other words, all faculty should be involved in similar types of endeavors; however, the combination of quantity, quality, intensity, and success level would be expected to be higher for a faculty with full Professor rank than with an Associate Professor rank.

One relevant issue is the faculty member's education. It is essential for re-appointment, tenure, promotion that she / he receive a doctorate or similar level of terminal degree.

Disciplinary Standards for Scholarly Activity

TCNJ embraces the model of a professor as a teacher-scholar. The College recognizes the need for faculty to actively engage in research projects relevant to their field, and to publish scientific findings in respected refereed journals. Appropriate modes of scholarship include: performance of advanced technical and innovative research in the field of engineering, advising of student research, publication of peer-reviewed conference and journal papers, generation of major funding applications, and acquisition of external funding, development of textbooks and innovative curricula (to be disseminated to parties outside of TCNJ), and participation in regional research initiatives. A major funding application is that submitted to institutions such as the National Science Foundation or Department of Defense. Certain consulting activities may be considered scholarship if it involved the creation rather than the application of knowledge and impacts significantly on one's discipline.

A key facet of the teacher-scholar model is the role of a faculty member as a teacher of scholarship to undergraduate students. Engagement of students in undergraduate scholarly activities not only enhances a research project by allowing more efficient and consistent execution of its tasks, but also affords the students a learning experience that is not attainable in typical classroom settings. Faculty should thus strive to serve as mentors who pass their knowledge and expertise about a particular topic to their students, who can gain a sense of fulfillment from contributing to new knowledge or pedagogy.

Faculty need to initiate and maintain a sustainable research program in a field of study relevant to the department of appointment that will support faculty-oriented and student-supported research efforts. Adequate infrastructure to support both faculty and student-supported research should be established. Collaborations are encouraged, but not at a level that will limit the ability of the faculty to perform individually directed research programs. In a collaborative effort, the faculty member must be a major contributor to the work (providing more than 33% of effort). She/he must demonstrate that the work could not have done without the individual's contribution. Generally, this is reflected by status as primary or corresponding author.

Interdisciplinary Work:

The productivity of a faculty member in discipline-related research may be complemented by productivity in interdisciplinary scholarship. Types of interdisciplinary scholarship, either cross-departmental or interschool collaborations, include interdisciplinary research, pedagogical research, and development of interdisciplinary projects in education or practice.

For interdisciplinary work, scholarly activity should be evaluated in the same manner as previously, with primary emphasis being given to refereed journal publications and submitted grant proposals that initiated or sustained a significant research endeavor.

For interdisciplinary work between two disciplines which typically do not share a common background (i.e. – engineering and business), the school recognizes that the end result of the collaboration may not be of a substantial technical nature as to be published in the typical refereed engineering journals. Therefore, a net result of this sort of collaboration leading to peer-reviewed conference papers, national presentations, publications in refereed journals not of a technical nature, etc. should be given equal weight as if the end result was a publication in a refereed technical journal, or a submitted grant proposal that initiated or

sustained a significant research endeavor. Additionally, in keeping with the mission of the College and its emphasis on student involvement in scholarly activity, interdisciplinary collaboration between two unlike disciplines which utilizes significant student involvement between both disciplines should be looked upon very favorably and be recognized as scholarly activity.

Guidelines for Scholarly Achievement:

Faculty need to publish relevant research in high-quality, peer-reviewed journals. The quality of a journal can be quantified using a combination of the following characteristics:

- Professional sponsorship or other affiliation status
- Status of the journal editors within their respective fields
- Total circulation of the journal
- Article citations five or more years after the publication date
- Average citation record for the journal
- Acceptance/rejection rates for the journal

The level to which a publication reflects upon a faculty member's scholarly effort is dependent on several characteristics beside journal quality including – number of authors (one vs. many), author status (primary vs. supporting), and scale of project (large vs. small). These issues should be considered for re-appointment, tenure, and promotion.

In addition to the publication of scholarly work, faculty are expected to further their scholarship through a combination of the following endeavors:

- Present and/or publish relevant research in high-quality conferences. The quality of a conference or conference proceeding can be quantified using a combination of the following characteristics:
 - A peer review process
 - The scope of the professional organization sponsoring the conference, i.e. international, national, or regional
 - Acceptance/rejection rates for submissions
- Seek external funding for equipment, research, and curriculum enhancement and development. Potential sources include not-for-profit organizations, government sources, and private companies
- Be active in the consulting and/or professional arena. Such activities are considered scholarly when they are within the faculty's scholarly area and involve the creation, rather than the application, of knowledge and impact significant on one's discipline
- For invited publications and presentations (including invited presentations at professional meetings and conferences or contributions to printed publications), the quality of the work can be quantified according to:
 - The scope of the professional organization extending the invitation (international, national, or regional)
 - The stature of the editor of the book or journal requesting the article

- The academic standing of the publisher
 - The readership of the journal or book
- Engage in the development of book materials, which has been contracted by a reputable publishing entity. The quality of a published book can be quantified using a combination of the following characteristics:
- The academic standing of the publisher, e.g. national recognition as an academic publisher
 - Published reviews of the work
 - Evidence of readership, e.g. size of the press run or sales
 - Citation frequency
- Enable undergraduate engineering students to participate in meaningful research, preferably work which allows these students to publish before graduation.

Reappointment and Tenure and Promotion to Associate Professor:

Faculty are expected to initiate an individual and original research program in an area of interest relevant to the department of their appointment. Integral to this program should be the involvement of undergraduates as active participants who learn new skills and gain insight into current topics of research and development. Faculty are expected to maintain a pattern of continuing achievement, with specific evidence of previous and continuing scholarly activity and professional endeavors. The scholarly activity and professional endeavors should be evidenced by at least two technical publications in refereed journals for which he/she is the first or corresponding author. In addition, the faculty should show scholarly activities in one of the following forms (all of which assume the faculty in-question is the first or corresponding author):

- ✦ One additional technical publication (or acceptance) in a refereed journal;
- ✦ One educational-related publication in a refereed journal describing a contribution to engineering pedagogy;
- ✦ One grant proposal in response to a national call from a major funding agencies;
- ✦ Three refereed, full-length technical conference publications sponsored by major professional organizations at the national or international level;
- ✦ One refereed, full-length conference publication with a significant interdisciplinary component. Note that this item differs from that above by its significant interdisciplinary component.

Note that a technical publication is one that requires application of advanced engineering or scientific knowledge and whose focus is not primarily educational.

Promotion to Professor:

Faculty are expected to sustain and expand the pattern of achievement, with evidence indicating the maturation of the scholarly and professional record. To sustain a pattern of scholarly activities, faculty are expected to maintain a consistent scholarly record over multiple years since promotion to the rank of associate professor. The sustained pattern of scholarly activity and professional endeavors should be evidenced by at least two technical publications in refereed journals for which he/she is the first or

corresponding author. In addition, the faculty should show maturation of scholarly activities in one of the following forms (all of which assume the faculty in-question is the first or corresponding author):

- ✦ One additional technical publication (or acceptance) in a refereed journal;
- ✦ One published book chapter of a technical nature;
- ✦ One educational-related publication in a refereed journal describing a contribution to engineering pedagogy;
- ✦ One funded grant proposal in response to a national call from funding agencies;
- ✦ Three refereed, full-length technical conference publications sponsored by major professional organizations at the national or international level;
- ✦ One refereed, full-length conference publication with a significant interdisciplinary component. Note that this item differs from that above by its significant interdisciplinary component; ✦ One invited presentation at a national or international conference or professional organization; ✦ One patent awarded.

The mature accomplishments listed above are in addition to those used to attain the rank of Associate Professor. Furthermore, the date of an accomplishment is based on the date of acceptance or award. For example, a funded grant or patent will be counted toward promotion to full professor if awarded after promotion to Associate Professor, regardless of whether the application was filed before that earlier promotion.